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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/574,745	05/18/2000	Charles Barry	M-8875 US	9947

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EXAMINER	
LAM, DANIEL K	

ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/574,745	BARRY ET AL.	
	Examiner	Art Unit	
	Daniel K Lam	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-21* is/are pending in the application.

4a) Of the above claim(s) *19-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *19-21* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/5-18-2000*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 3-18, classified in class 370, subclass 503,

   II. Claims 19-20, classified in class 370, subclass 229, and

   III. Claim 21, classified in class 370, subclass 252.

   Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II and III. Furthermore, these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

   During a telephone conversation with Miss Michele Liu, attorney for the applicants, on March 10, 2004, a provisional election was made with traverse to prosecute the invention of claims in Group I. Affirmation of this election must be made by applicant in replying to this Office action. Claims in Groups II and III are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

2. The abstract of the disclosure is objected to because an abstract should be a single paragraph instead of two. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities:

On page 7, line 11, "device 20 and to device 22" should be device 22 and to device 20" as shown in figure 2.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 3 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Pat. No. 6,438,175 issued to Yamashita.

Regarding claim 3, Yamashita discloses a method for synchronizing nodes by generating a control signal during a transmission of a data frame, comprising:

- Receiving the serial data DZS, the S/P converting and clock detecting unit 21 reproduced the DZ(10) signal. Then, the synchronous word data detector 24 reproduced a synchronous SKD signal (receiving, by said second nodes, said control signal after receiving only a portion of said data frame). See fig. 4, and col. 13, lines 29-37.
- Supplying the SKD signal to the word clock generator 22 and the synchronous signal forming unit 25 to reproduce local clocks and receive data (performing, by said second nodes, an action required by said control signal prior to waiting until said data frame has been fully received). See fig. 4, and col. 13, lines 38-44.

Regarding claim 8, in addition to disclose the claim limitations regarding claim 3 discussed in the previous paragraphs, Yamashita further discloses that the control signal is an 8B/10B encoded control characters, namely, +K(28.5) and D(21.5). See fig. 5.

6. Claims16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Pat. No. 6,262,996 issued to Kainulainen et al.

Regarding claim 16, Kainulainen et al. discloses a method for synchronizing nodes by exchange synchronization messages, comprising:

- Nodes interchange messages containing addresses. The nodes identify each other by means of address numbers and establish a synchronization hierarchy (creating a network topology map corresponding to relative locations of nodes). See col. 4, lines 50-55.

- Each node compares continuously incoming synchronization messages. Each message contains synchronization signature, D1-D2-D3, where D1 identifies the master node and D3 identifies the node transmitting the message (receiving a notice from said source node that said source node is the broadcaster of said synchronization signal). See fig. 2, col. 4, lines 64-67, and col. 5, lines 4-7.
- If two or more of incoming signals are synchronized with the same master node, the one arriving over the shortest path is selected (automatically selecting a synchronization signals at said interface with said neighboring node based on certain cost criteria and automatically accepting said synchronization signals from said neighboring node). See col. 5, lines 20-22.

Regarding claim 17, in addition to disclose the claim limitation regarding claim 16 discussed in the previous paragraphs, Kainulainen et al. further discloses, if two or more of incoming signals are synchronized with the same master node, the one arriving over the shortest path is selected (cost criteria is the least number of node hops). See col. 5, lines 20-22.

Regarding claim 18, in addition to disclose the claim limitation regarding claim 16 discussed in the previous paragraphs, Kainulainen et al. further discloses the steps for setting up the synchronization hierarchy starting from initial state when none of nodes has yet process any message to a stable state (creating a network topology map occurs a node is inserted into said network). See fig. 3 and col. 6, lines 31-40.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 4, 10, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 6,438,175 issued to Yamashita in view of U. S. Pat. No. 5,726,607 issued to Brede et al.

Regarding claims 4, 10, 12 and 15, although Yamashita discloses the claim limitation regarding claim 3 discussed in the previous paragraphs, he does not disclose the claim limitations of:

- Generating local clock signals by a local clock in said second n; and correcting any timing error action in said local clock so that timing jitter is limited to less than a data frame period (claim 4).
- Control signal is a master clock signal (claim 10).
- Performing an action to correct a timing error between a local clock and the master clock (claim 12).
- Performing an action to synchronize a local clock with said control signal (claim 15).

However, Brede et al. discloses a micro-controller based phase lock loop that locks onto a 1.544 Mhz primary (master) timing reference signal and produces a jitter free local 2.56 MHz phase aligned system output clock. See fig. 1, and col. 3, lines 43-45.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to generate a local clock signal from the master control clock signal provided by the remote node so that any timing jitter between the master control clock signal and the local clock signal is limited to less than a data frame period or even free. The key motivation is that any independent clocks, within a network, must be synchronized to ensure correct and complete information transmission over the network as taught by Brede et al. See col. 1, lines 21-24. Any timing jitter at the receiving node, will, inadvertently, corrupt received data.

9. Claims 5, 6, 7, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 6,438,175 issued to Yamashita in view of U. S. Pat. No. 5,726,607 issued to Brede et al. in further view of U. S. Pat. No. 6,259,695 issued to Ofek.

Regarding claims 5 and 6, although Yamashita and Brede et al. disclose the claim limitations regarding claim 4 discussed in the previous paragraphs, they do not disclose the claim limitations of:

- The master clock signal is an 8KHz clock (claim 5), and
- The 8KHz clock is a Global Positioning (GPS) clock (claim 6).

However, Ofek discloses a method of distributing common timing reference to both packet and telephony switch networks. The method comprises a GPS Receiver 20 receives timing references from satellites and distributes a common time reference, CTR, and 8KHz reference clock, to the remote network nodes via SVP(1), SVP(2), SVP(k) output ports. See fig. 1, and col. 9, lines 30-31.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to utilize globally available GPS and an 8KHz as the master clock signals, for couple of key motivations. Firstly, the GPS is globally available providing high accurate timing reference at a very affordable cost as taught by Ofek (see col. 3, lines 52-53, and lines 60-61. Secondly, it is common practice and is widely deployed in the telephony switch networks to synchronize networking equipment with an 8Khz clock master signal.

Regarding claims 7, 9, and 11, in addition to disclose the claim limitation regarding claim 3 discussed in the previous paragraphs, Ofek further discloses that

- The incoming data packet can have various format including IEEE 802 MAC (The data frame is transmitted in accordance with an Ethernet protocol; claim 7. The data frame is a packet; claim 9). See fig. 6A (payload and header), and col. 14, lines 11-12, and lines 19-20.
- The synchronization with common time reference, CTR, is done within output port 40 of an SVP switch 10 (said performing an action by a media access controller, MAC; claim 11). See fig. 9, and col. 15, lines 24-26.

Allowable Subject Matter

10. Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel K. Lam whose telephone number is (703) 305-8605. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

    If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for this Group is (703) 872-9314.

    Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

    Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status Information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKL
March 19, 2004

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